

# Creating YouTube Videos to Enhance Learning

Stephen Comer  
The Citadel

SCCTM 2009 Conference  
October 23, 2009

## Overview

Background

Video uses

Video objectives

Set up

- Hardware
- Programs

Production workflow

Examples and Resources

Finite Math Podcasts - Mozilla Firefox

file:///F:/temp/FMpodcasts.html

podcast Schneier on Security News

## Finite Math Podcasts

### Finite Math video podcasts

The following series of videos is intended to help students master the basic computational skills needed in a Finite Mathematics course. Each video will be about 4 to 5 minutes in length and deal with a single idea. The videos are either flash(.swf) or Windows Media Video(.wmv) files. The plan is to add videos on a daily basis to cover the entire course. We'll see how that goes! Let me know if you have ideas for topics not covered.

- [Episode 1](#) The basic compounding formula (4:13)
- [Episode 2](#) The compound Future Value with TVM Solver (4:19)
- [Episode 3](#) The Compound Annual Growth Rate using the TVM Solver (4:39)
- [Episode 4](#) Basic compound template in Excel (5:49)
- [Episode 5](#) Simulating compound growth in Excel (5:07)
- [Episode 6](#) The CAGR using Excel Goal Seek and Solver (4:12)
- [Episode 7](#) Simulating an increasing annuity in Excel (5:57)
- [Episode 8](#) Future Value of an increasing annuity in Excel (3:22)
- [Episode 9](#) Calculator formula for Future Value of an increasing annuity (3:26)
- [Episode 10](#) Future Value of an annuity with the TVM Solver (2:43)
- [Episode 11](#) Payments to accumulate a goal with the TVM Solver (2:14)
- [Episode 12](#) Payments to accumulate a goal using Excel Solver (3:49)
- [Episode 13](#) Simulating a decreasing annuity in Excel (5:11)
- [Episode 14](#) Loan payments with the TVM Solver (3:38)
- [Episode 15](#) Decreasing Annuity Present Value with TVM Solver (2:45)
- [Episode 16](#) Adjustable Rate Mortgage (ARM) payments (4:10)
- [Episode 17](#) Loan payment template (ARM) payments (4:46)
- [Episode 18](#) Loan amortization schedule (ARM) payments (4:49)

Done

Khan Academy - Mozilla Firefox

http://www.khanacademy.org/

News Corner Schneier on Security Math 518 WebReference News Charleston Weather F...

Khan Academy Gmail: Email from Google Microsoft Outlook Web Access

# KHAN ACADEMY

Donate

The Khan Academy is a not-for-profit organization with the mission of providing a high quality education to anyone, anywhere.

We have 900+ videos on YouTube covering everything from basic arithmetic and algebra to differential equations, physics, chemistry, biology and finance which have been recorded by Salman Khan.

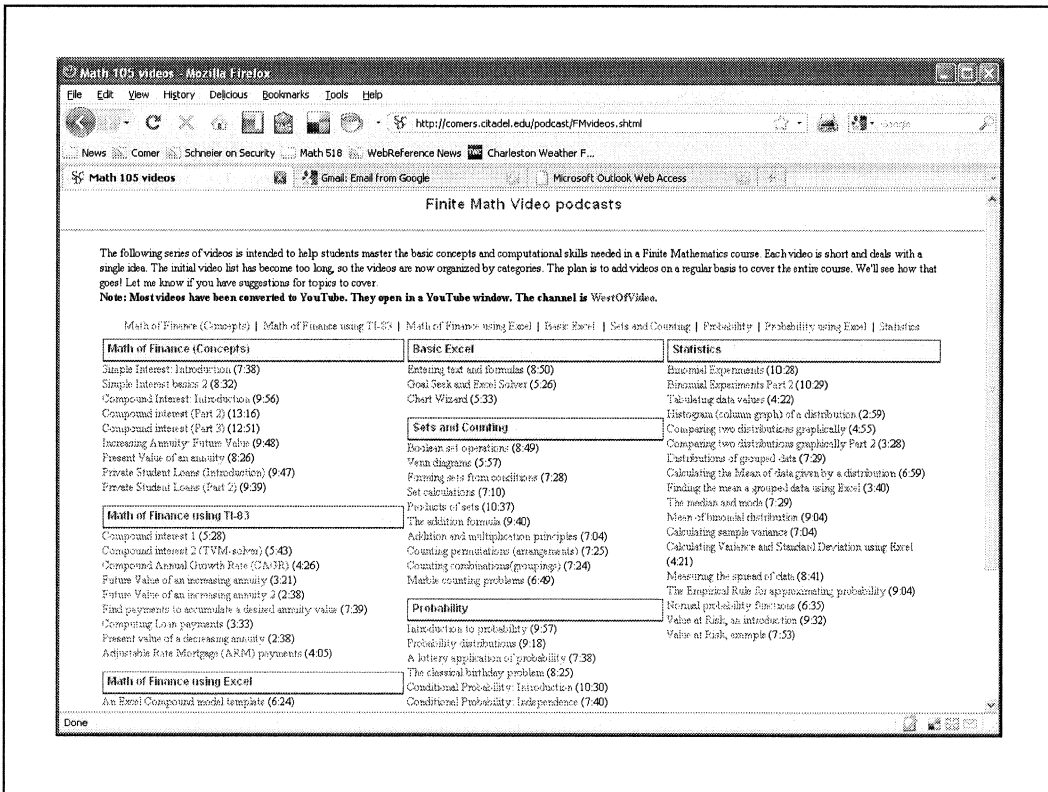
He has also developed a free, adaptive math program available [here](#). (Keep in mind that the web application is not fully supported and may not work properly with certain browser and/or network configurations)

To keep abreast of new videos as we add them, subscribe to the Khan Academy channel on YouTube.

The entire video library is shown below. Just click on a category or video title to start learning from the Khan Academy!

<p>Calculus   Precalculus   Trigonometry   Algebra   Finance   Pre-algebra   Arithmetic   Geometry   Physics   SAT Preparation   Probability   Linear Algebra   Differential Equations   Credit Crisis   Banking and Money   Pauson Bailout   California Standards Test Algebra II   California Standards Test Algebra I   California Standards Test Geometry   Venture Capital and Capital Markets   Statistics   Oilfield Plan   Current Economics   Brain Teasers   Valuation and Investing   Chemistry   Biology</p>	<p><b>SAT Preparation</b></p> <p>We have taken all 8 math practice tests (432 problems) in "The Official SAT Study Guide" by the College Board in 100+ videos ...</p> <p><b>GMAT Preparation</b></p> <p>We have taken all 400+ data sufficiency and math problems in The</p>	<p><b>Chemistry</b></p> <p>Introduction to the atom Orbitals More on orbitals and electron configuration Electron Configurations Electron Configurations 2 Valence Electrons Groups of the Periodic Table Periodic Table Trends: Ionization Energy Other Periodic Table Trends Ionic, Covalent, and Metallic Bonds Molecular and Empirical Formulas The Mole and Avogadro's Number</p>	<p><b>Trigonometry</b></p> <p>Basic Trigonometry Basic Trigonometry II Radians and degrees Using Trig Functions Using Trig Functions Part II The unit circle definition of trigonometric function Unit Circle Definition of Trig Functions Graph of the sine function Graphs of trig functions Graphing trig functions More trig graphs Determining the equation of a 2-dimensional projectile motion</p>	<p><b>Physics</b></p> <p>introduction to motion introduction to motion (part 2) introduction to motion (part 3) Projectile motion (part 1) Projectile motion (part 2) Projectile motion (part 3) Projectile motion (part 4) Projectile motion (part 5) Projectile motion (part 6) Projectile motion (part 7) Projectile motion (part 8) Projectile motion (part 9) Projectile motion (part 10) 2-dimensional projectile motion</p>	<p><b>CNN: Sal on the Credit Crisis</b></p> <p>Sal appears on the Rick Sanchez show to explain the Credit Crisis</p> <p>This appearance has led to a paper that Sal has co-authored with Berkeley professor Dr. David Leibweber on a solution to unifying credit markets which is available <a href="#">here</a>.</p> <p><b>About Salman Khan</b></p> <p>Salman Khan (Sal) founded the Khan Academy with the goal of using technology to educating the world</p> <p>Sal received his MBA from Harvard Business School. He also holds a Masters in electrical engineering and computer science, a BS in electrical engineering and computer science, and a BS in</p>
--	--	--	---	--	---

Done



## Uses of videos

- Short tutorials
- Problem solutions
- Student work/projects
- Courses

## Video objectives

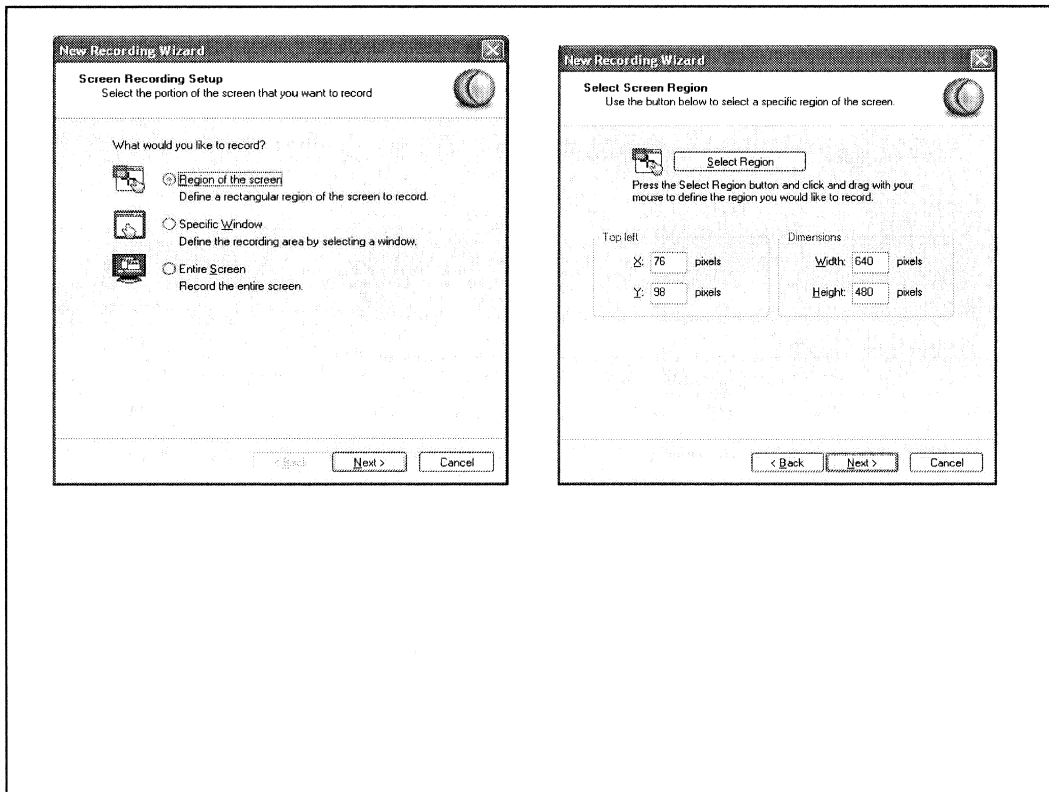
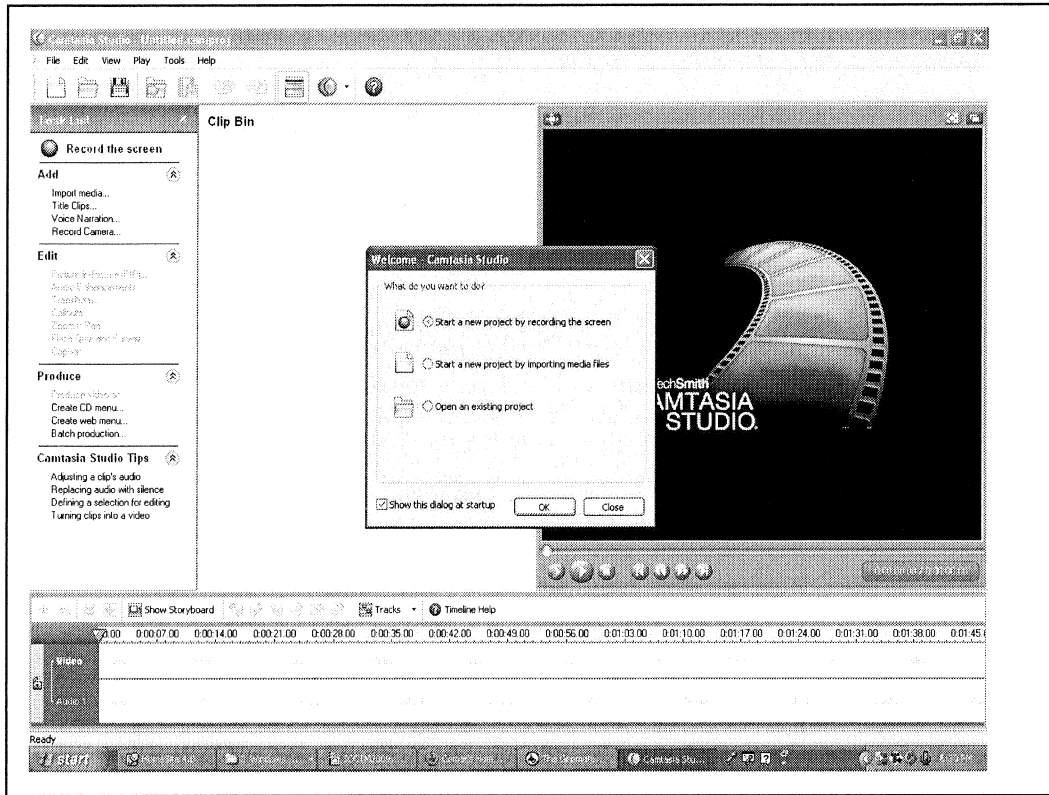
- 5-10 minutes in length
- Focus on specific idea/technique
- Use 640x480 resolution and < 2MB file size
- Use appropriate file types
  - wmv, mp4, avi, flv, swf
- Suitable distribution medium
  - Web page
  - Youtube
  - Blog

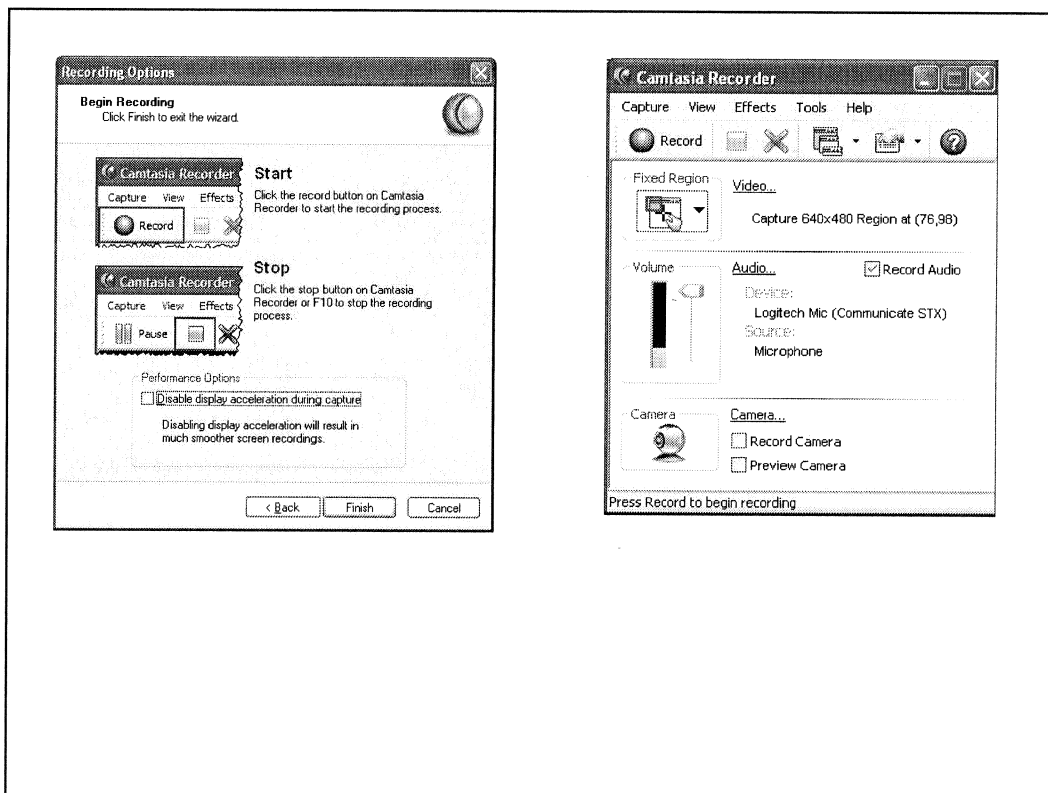
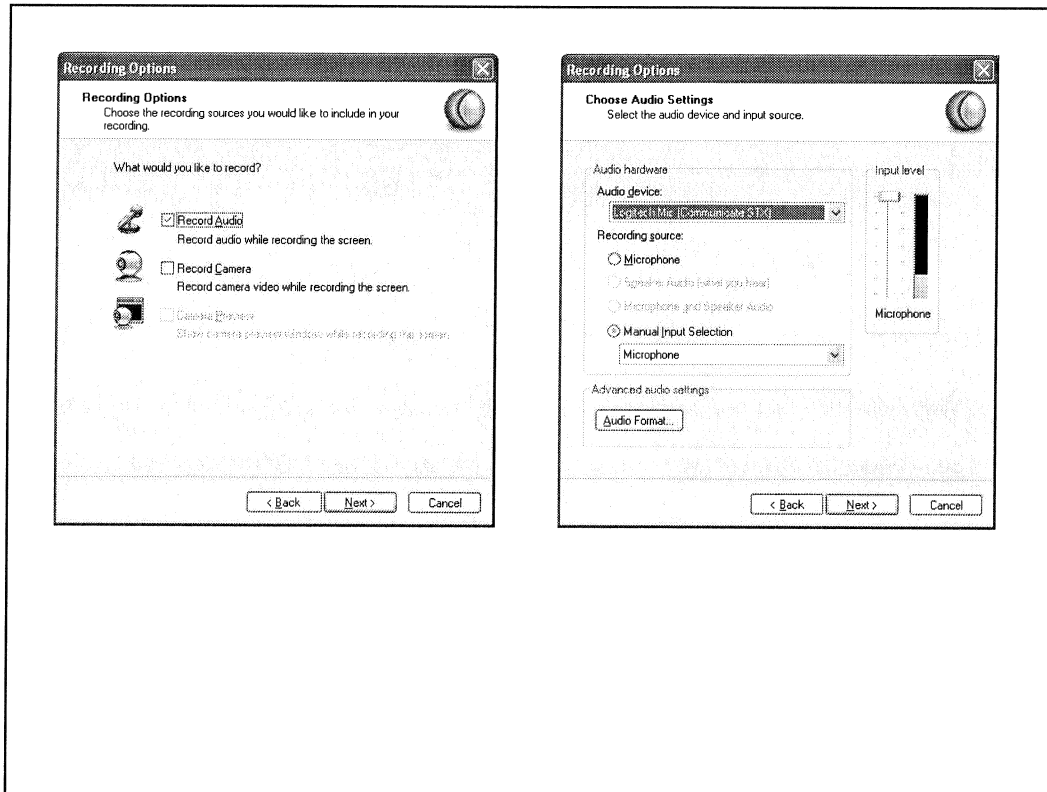
## Set up for creating videos

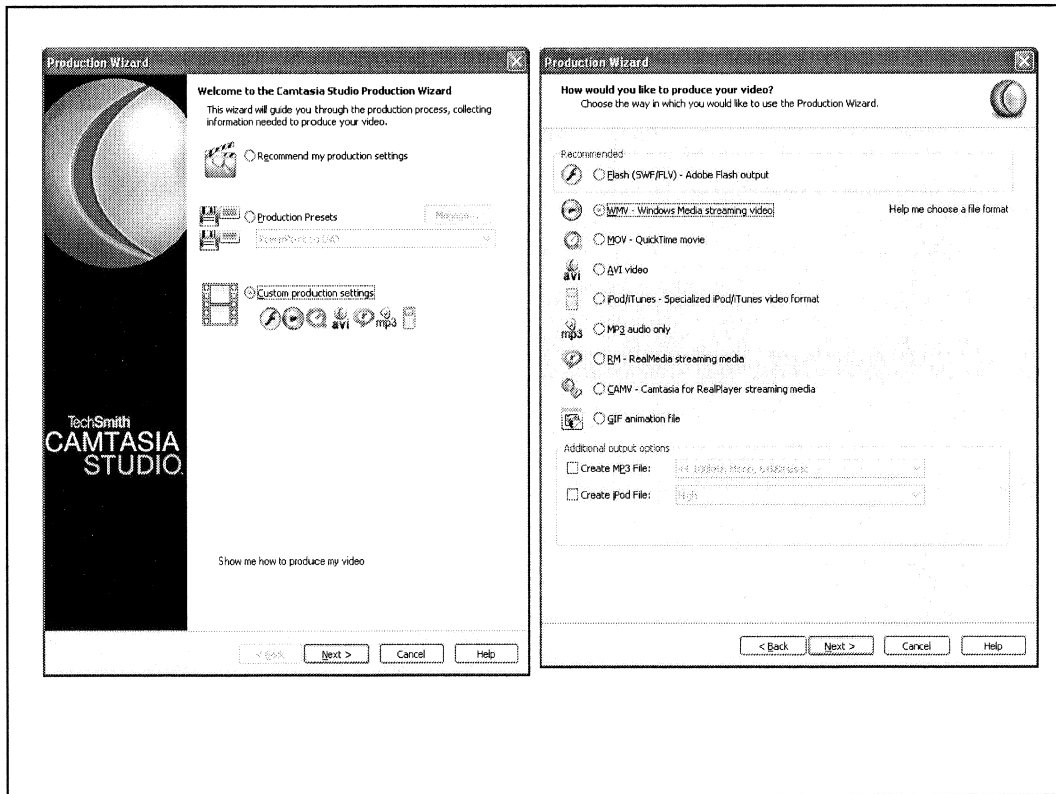
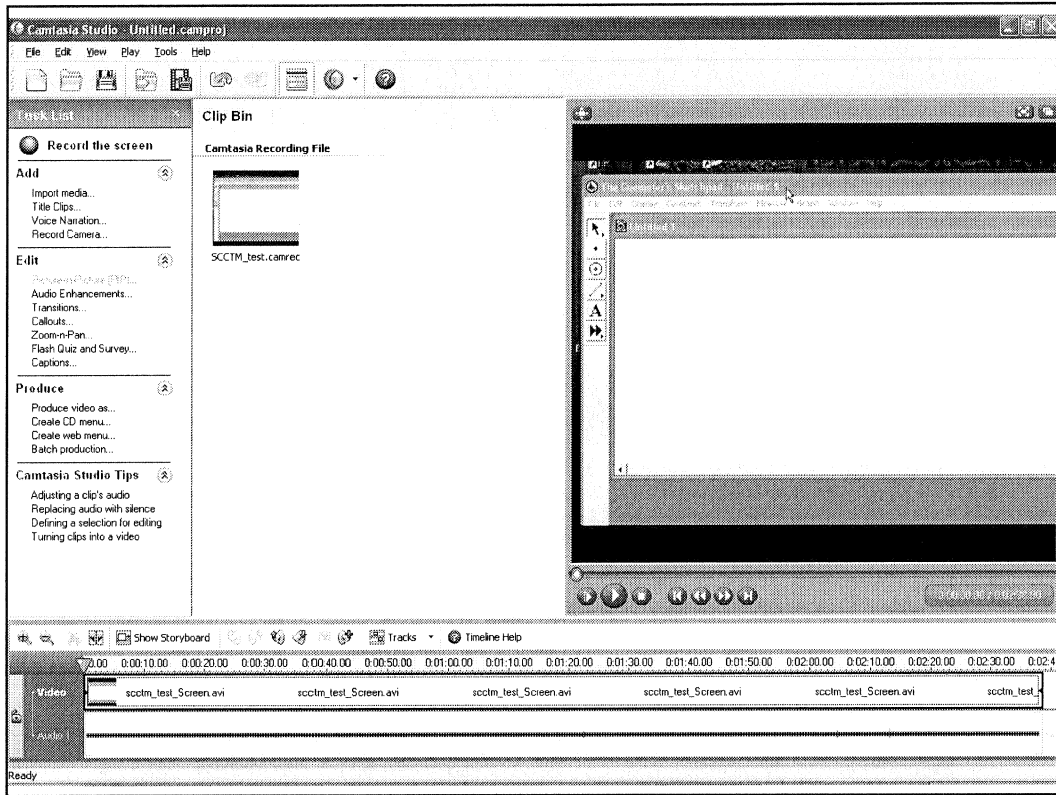
- Hardware
  - Pen tablet
  - microphone/webcam
- Programs
  - Screen capture
    - Camtasia Studio, CamStudio, Jing, Community Clips
  - Drawing program
    - Gimp, PaintShop Pro, Paint, Paint.NET
  - Application programs
    - GSP, Excel, TI Emulator, GeoGebra, WinPlot, etc

## Workflow

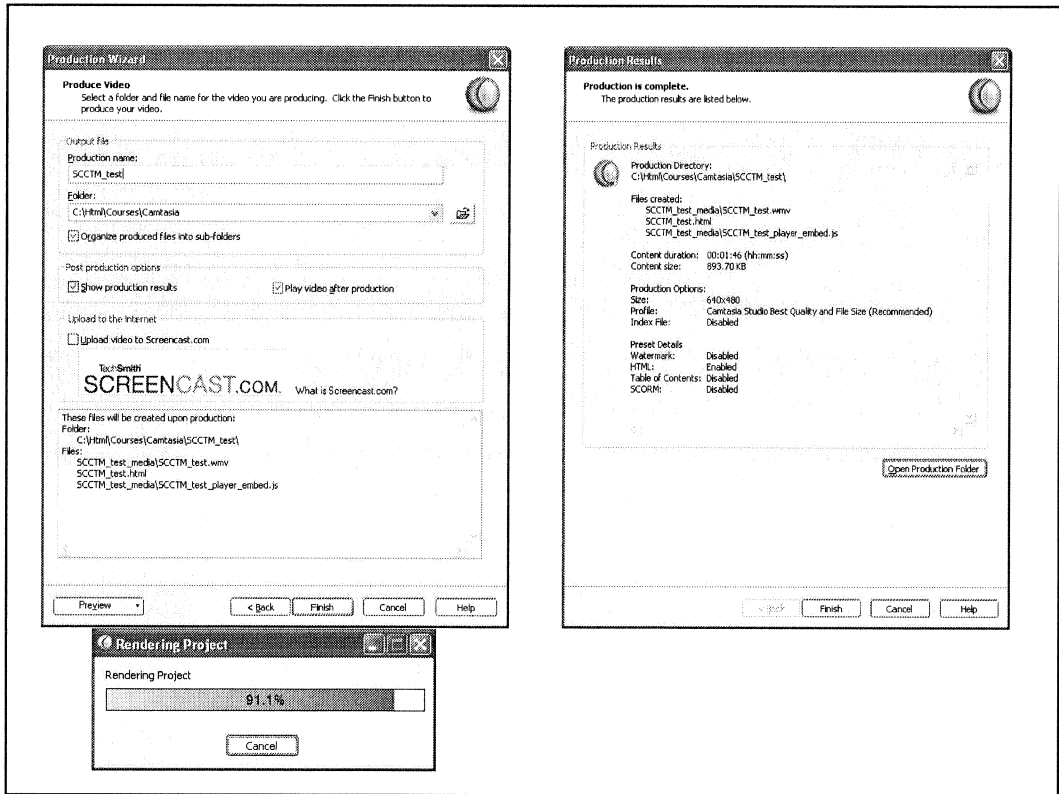
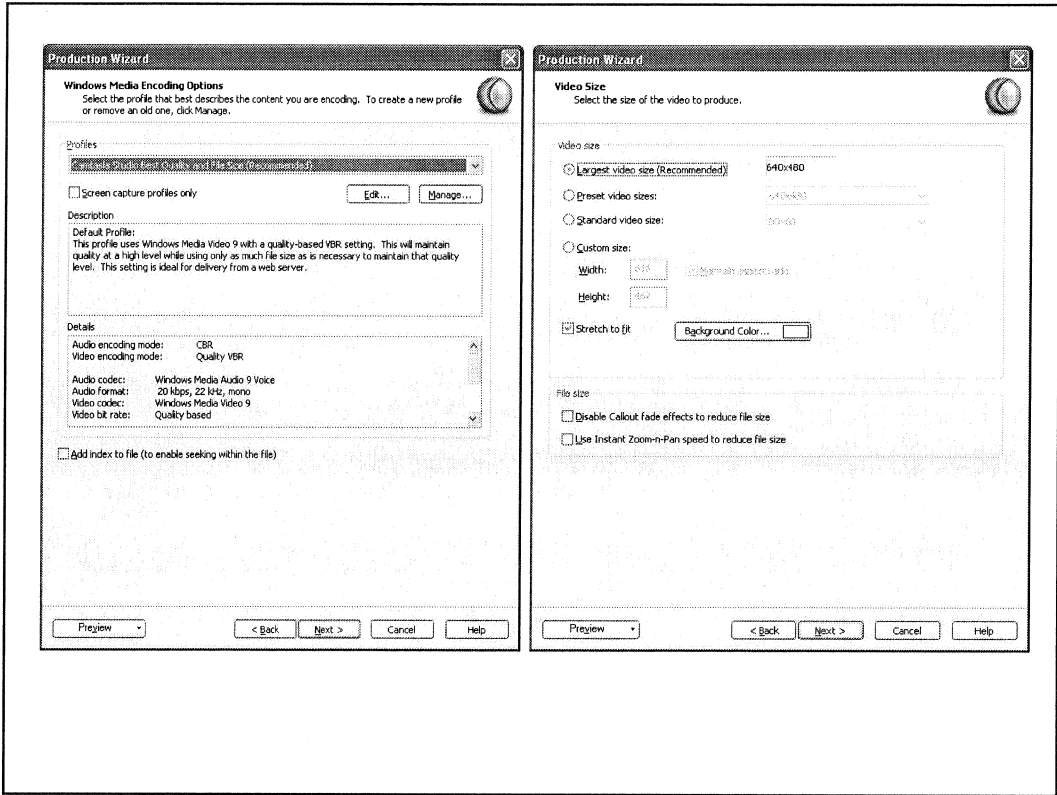
- Prepare Storyboard
- Prepare screen (load programs to be used)
- Load screen capture program
- Set up region to capture and test audio
- Record
- Edit screen capture
- Produce video
- Upload to destination

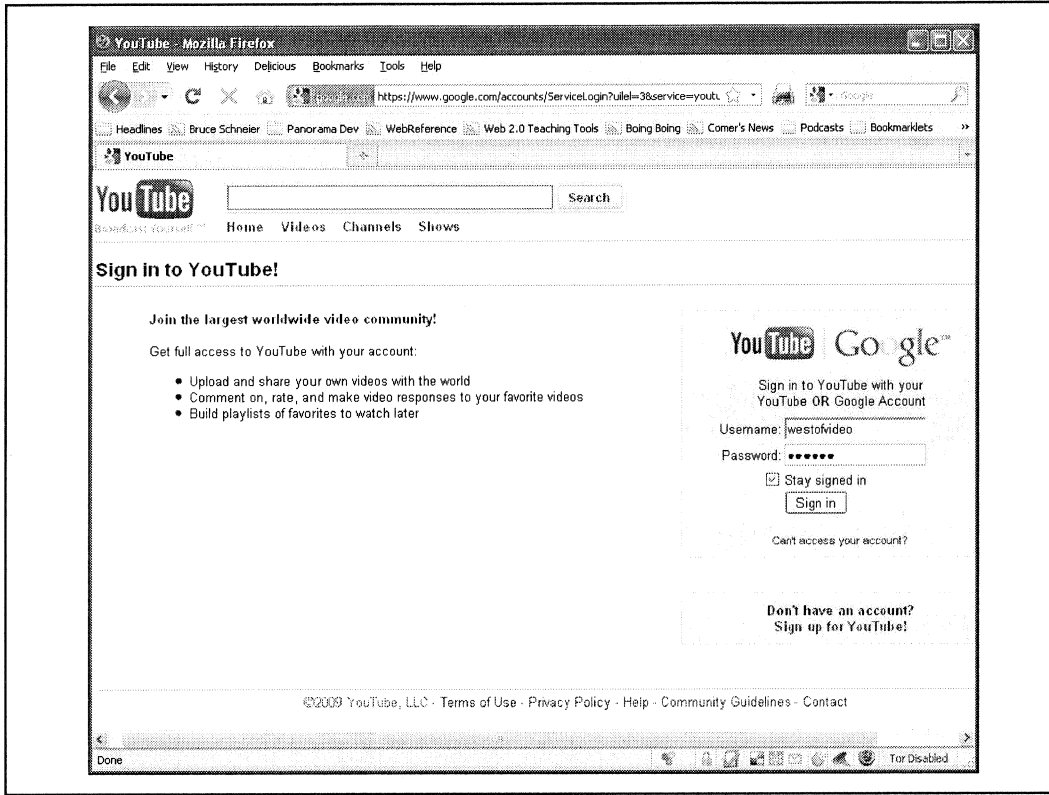


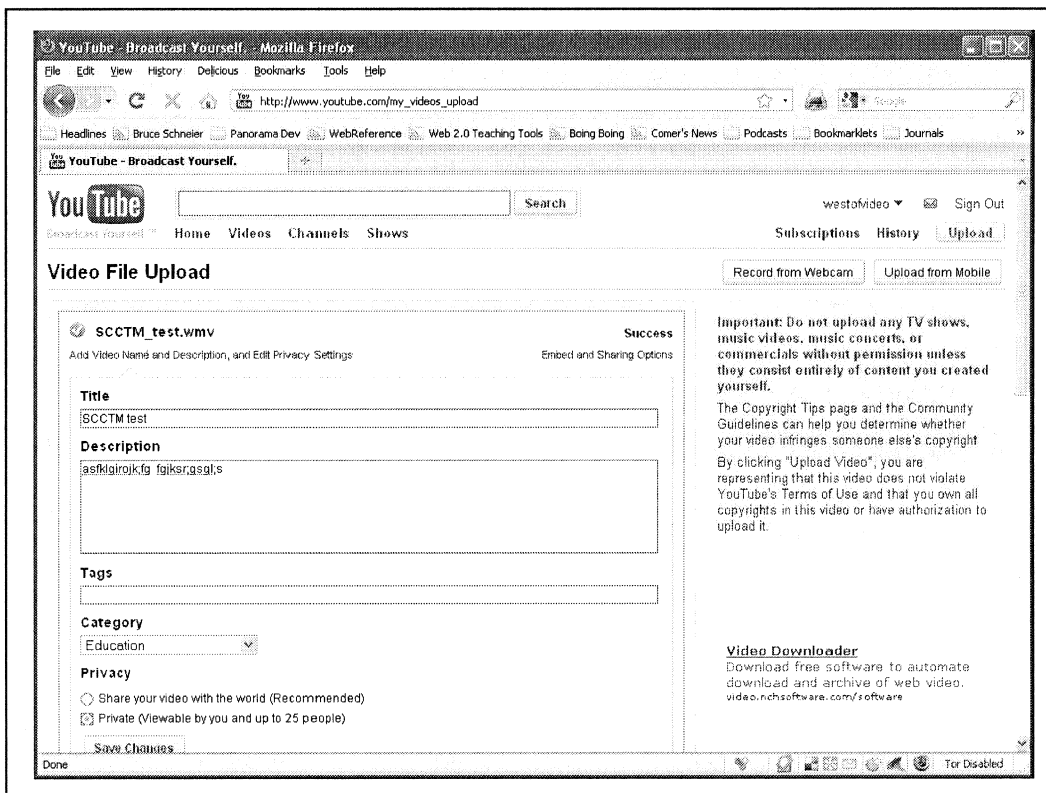
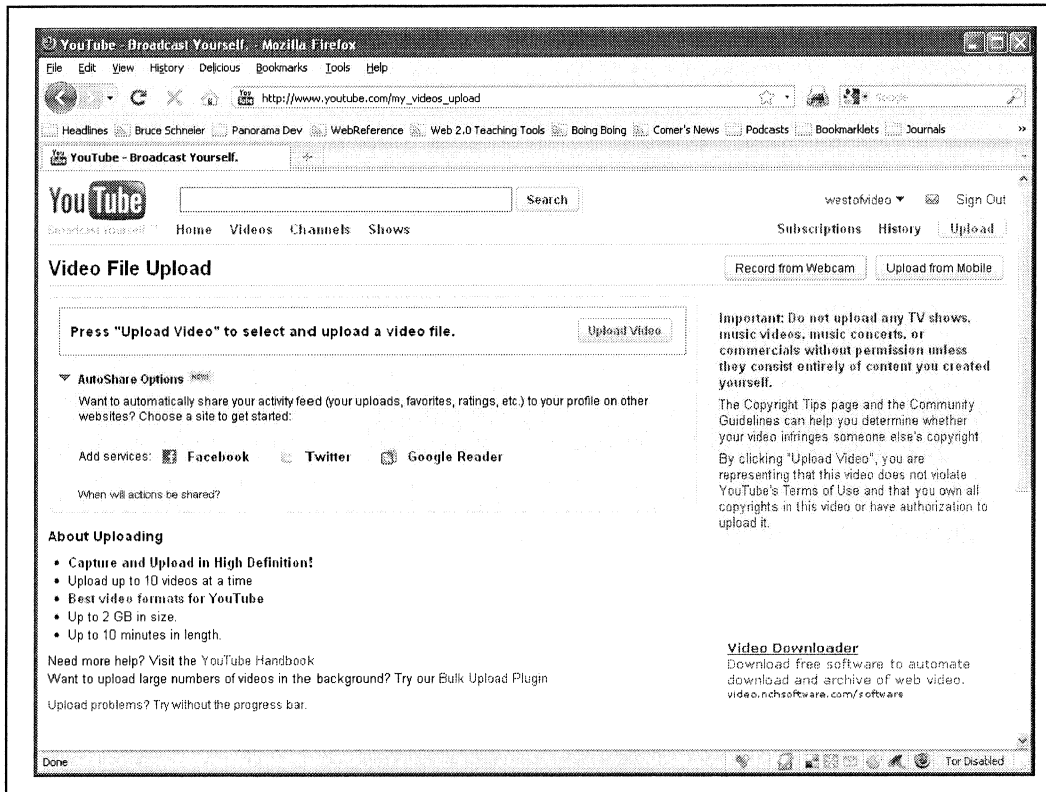












## Math Video Sites Examples

- Khan Academy ([www.khanacademy.org](http://www.khanacademy.org) and [www.youtube.com/khanacademy](http://www.youtube.com/khanacademy))
- Finite Math Videos ([comers.citadel.edu/podcast](http://comers.citadel.edu/podcast) and [www.youtube.com/westofvideo](http://www.youtube.com/westofvideo))
- Youtube Math Tutors  
([www.squidoo.com/Youtube-Math-Tutors](http://www.squidoo.com/Youtube-Math-Tutors))
- Math with Larry  
([www.youtube.com/mathwithlarry](http://www.youtube.com/mathwithlarry))
- Excel Is Fun (Highline Community College)  
[www.youtube.com/Excelisfun](http://www.youtube.com/Excelisfun)

- Effective Math Videos  
([k12wiki.wikispaces.com/Effective+Math+Videos](http://k12wiki.wikispaces.com/Effective+Math+Videos))
- 30+ Alternatives to YouTube  
[www.freetech4teachers.com/2009/06/30-alternatives-to-youtube.html](http://www.freetech4teachers.com/2009/06/30-alternatives-to-youtube.html)
- Camtasia Studio [www.techsmith.com/](http://www.techsmith.com/)
- Camstudio [camstudio.org/](http://camstudio.org/)